

Remarks

Reconsideration and withdrawal of the objection and rejections set forth in the above-mentioned Official Action in view of the foregoing amendments and the following remarks are respectfully requested.

Claims 1-11 and 34-37 are now pending, with Claims 1, 4, 7 and 9 being independent. Claims 1, 2, 4, 7 and 9 have been amended and Claims 34-37 have been added herein. Support for the newly-presented claims can be found in the specification at least at page 42, lines 3-15.

Applicants note with appreciation the indication that Claims 2, 5, 8 and 10 recite allowable subject matter. These claims were objected to for being dependent upon rejected base claims. However, these claims will not be rewritten in independent form at this time because their respective independent claims are believed to be allowable for the reasons discussed below.

Claims 1, 3, 4, 7 and 9 were rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 5,497,174 (Stephany et al.) in view of U.S. Patent No. 5,788,385 (Inoue et al.). Claims 6 and 11 were rejected under § 103 as being unpatentable in further view of U.S. Patent No. 5,896,146 (Murata et al.). These rejections are respectfully traversed.

Each independent claim recites, inter alia, adjusting the drive signal applied to the recording elements based on the number of recording elements to be driven within a discharge cycle and the number of recording elements to be substantially simultaneously driven in each of the blocks sequentially driven within the discharge cycle. With the

claimed arrangements and methods, the momentary change of the current by the drive signal can be obtained by the number of the recording elements to be substantially simultaneously driven, and the averaged change of current in the discharge cycle can be obtained based on the number of recording elements to be driven within the discharge cycle, as a basic current change in the discharge cycle. As such, amount of energy to be supplied to each recording element can be determined even when the determination of the number of recording elements to be substantially simultaneously driven is complicated by such factors as differences in the resolution of the image data to be recorded. Therefore, the drive signal applied to the recording elements can be adequately adjusted.

Stephany et al. relates to an ink jet printer with voltage drop correction. A number of heater elements to be pulsed at a given time is determined and a time duration of each of the pulse signals is selected based on information including the determined number of heater elements to be pulsed. Another factor for determining time duration of the pulse is the position of the heater elements on the printhead.

However, Stephany et al. does not disclose or suggest taking into consideration both the number of recording elements to be driven within a discharge cycle and the number of recording elements to be substantially simultaneously driven in each of blocks sequentially driven within the discharge cycle. Accordingly, Stephany et al. fails to disclose or suggest adjusting a drive signal applied to recording elements based on the number of recording elements to be driven within a discharge cycle and the number of recording elements to be substantially simultaneously driven in each of the blocks

sequentially driven within the discharge cycle, as is recited in independent Claims 1, 4, 7 and 9.

Thus, Stephany et al. fails to disclose or suggest important features of the present invention recited in the independent claims.

Inoue et al. relates to a serial recording system in which the scan speed of the recording head can be changed according to the resolution of image data to be recorded by the recording head. As understood by Applicants, Inoue et al. teaches changing a driving frequency of the recording head according to a resolution of the image data to be recorded by the recording head. However, Inoue et al. is not believed to remedy the deficiencies of Stephany et al. noted above with respect to the independent claims.

Murata et al. describes a recording apparatus that performs block driving of plural recording heads. Depending on whether recording is to be effected with high resolution or low resolution, the timings of driving plural groups are made to be the same or different. However, Murata et al. is also not believed to remedy the deficiencies of the citations noted above with respect to the independent claims.

Thus, independent Claims 1, 4, 7 and 9 are patentable over the citations of record. Reconsideration and withdrawal of the § 103 rejections are respectfully requested.

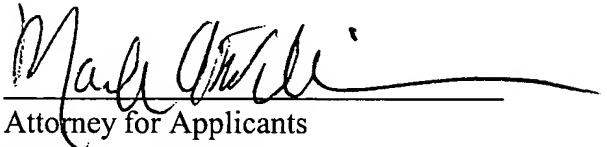
For the foregoing reasons, Applicants respectfully submit that the present invention is patentably defined by independent Claims 1, 4, 7 and 9. Dependent Claims 2, 3, 5, 6, 8, 10, 11 and 34-37 are also allowable, in their own right, for defining features of the present invention in addition to those recited in their respective independent claims. Individual consideration of the dependent claims is requested.

Applicants submit that the present application is in condition for allowance.

Favorable reconsideration, withdrawal of the objection and rejections set forth in the above-noted Office Action, and an early Notice of Allowability are requested.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Mark A. Williamson', is written over a horizontal line.

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